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      (FILE 'HOME' ENTERED AT 14:24:05 ON 21 OCT 2004)
      FILE 'CA' ENTERED AT 14:24:58 ON 21 OCT 2004
L1       6 S FRANCHINI G?/AU AND 1989/PY
L2       2 S L1 AND TEMPERATURE
L3  90799 S (PHASE OR RESPONSE OR PROPERTY OR PARAMETER OR
            BOUNDARY)(3A)(PLOT? OR DIAGRAM OR GRAPHIC? OR GRAPH OR DISPLAY?)
L4  35943 S L3 AND TEMPERATURE
L5  14183 S L4 AND(COMPOSITION OR CONCENTRATION)
L6     689 S L5 AND (OIL OR EMULSION OR MICEL?)
L7  39408 S L3 AND(DETERMIN? OR MEASUR? OR CREAT? OR CHARACTERI?)
L8     402 S L6 AND L7
L9      16 S L6 AND(3D OR 3 D OR 3 DIMENSION? OR THREED OR THREE D OR THREE
            DIMENSION?)
L10    125 S L8 AND(VISCO? OR CLOUD? OR TURBID?)
L11    138 S L9-10
L12     73 S L11 NOT PY>1998
L13     75 S L2,L12


=> d bib,ab,kwic l13 1-75


L13   ANSWER 10 OF 75   CA   COPYRIGHT 2004 ACS on STN
AN    127:323037  CA
TI    Study of the Viscosity of Nonionic Surfactant/Deuterium Oxide Mixtures
      and of the Self-Diffusion Coefficient of the Surfactant Approaching the
      Liquid/Liquid Coexistence Curve
AU    Lesemann, M.; Martin, A.; Belkoura, L.; Fleischer, G.; Woermann, D.
CS    Institut fuer physikalische Chemie, Universitaet Koeln, Cologne, D-
      50939, Germany
SO    Langmuir (1997), 13(20), 5289-5293
AB    Plots of the temp. dependence of the shear viscosity η of C12E5/D2O
      mixts. with compns. in the range 0.60 ×10-2 < y < 10.08 ×10-2 (crit.
      compn. yc = 1.08 ×10-2; y, mass fraction of C12E5) are S-formed (a
      shallow min. at a lower temp. Tη,min and a max. at a higher temp.
      Tη,max).  The measurements are carried out in the temp. range 5°C < T <
      TP; TP ≈ 30°C approaching the lower part of the binodal curve (TP, temp.
      of phase sepn. of the mixt.).  In the temp. range (TP - Tη,max) the
      viscosity decreases with increasing temps.  At compns. y < 0.60 ×10-2
      the viscosity decreases with increasing temp. monotonically.  The self-
      diffusion coeff. of C12E5 in C12E5/D2O mixts. is measured in the same
      temp. and compn. range.  The findings of both types of expts. are
      rationalized in terms of a model developed by Nilsson et al. (1983).
      The results give support to the hypothesis that the characteristic
      features of the temp. and compn. dependence of both transport coeffs.
      in the large aggregate region of the phase diagram have a common cause:
      The structural dynamics of the large micellar aggregates increases
      approaching the liq./liq. coexistence curve at compns. y > yc.  Concn.
      fluctuations with long range correlations appear to be involved in this
      process.
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AN   125:302039   CA
TI   Rheology of a Lower Critical Solution **Temperature** Binary Polymer Blend
      in the Homogeneous, Phase-Separated, and Transitional Regimes
AU   Kapnistos, M.; Hinrichs, A.; Vlassopoulos, D.; Anastasiadis, S. H.;
      Stammer, A.; Wolf, B. A.
CS   Foundation for Research TechnologyHellas, Institute of Electronic
      Structure Laser, Heraklion, 71110, Greece
SO   Macromolecules (1996), 29(22), 7155-7163
AB   Small amplitude oscillatory shear rheol. is employed in order to
      investigate the linear **viscoelastic** behavior of the lower crit. soln.
      temp. blend polystyrene/poly(vinyl Me ether), PS/PVME, as a function of
      temp. and **compn.** At low **temps.**, where the mixt. is homogeneous, the
      dependence of the zero shear **viscosity** ($\eta 0$) on **concn.** was **measured** and
      was well-described by means of a new mixing rule, based on surface
      fractions instead of vol. fractions. Shift factors from time-**temp.**
      superposition (TTS) exhibit a Williams-Landel-Ferry (WLF) behavior. As
      the macrophase sepn. **temp.** is approached (the **phase diagram** being
      established by **turbidity measurements**), the blend exhibits a
      thermorheol. complex behavior. A failure of TTS is obsd. at low
      frequencies, both in the homogeneous pretransitional and in the two-
      phase regimes. Its origin is attributed to the enhanced **concn.**
      fluctuations, which exhibit a crit. slowing down near the phase
      boundary in the homogeneous regime, and in the two-phase morphol.
      inside the phase-sepd. regime. The anomalous pretransitional behavior
      can be quantified using a recent mean field theory, yielding the
      spinodal **temp.** Furthermore, in the two-phase region an intermediate
      region of enhanced moduli at low frequencies is obsd., followed by flow
      at even lower frequencies, which is attributed to the two-phase
      structure. The linear **viscoelastic** properties of the phase-sepd.
      blends are, to a first approxn., adequately described by a simple
      incompressible **emulsion** model considering a suspension of droplets of
      one coexisting phase in the matrix of the other phase.

AN   125:178044   CA
TI   **Phase diagram** of water-sodium perfluorodecanoate-sodium decylsulfonate
      system
AU   Akune, Takeshi; Abe, Mitsuhiro; Murata, Yoshio; Maki, Toshiya; Moroi,
      Yoshikiyo; Furuya, Hiromi; Tanaka, Mitsuru
CS   Fac. Sci., Fukuoka Univ., Fukuoka, 814-01, Japan
SO   Journal of Colloid and Interface Science (1996), 181(1), 136-141
AB   **Phase diagrams** of Na perfluorodecanoate-water and Na decanesulfonate-
      water systems were drawn from changes of soly. and crit. **micelle concn.**
      (CMC) with **temp.** The mixed CMC values of the 2 surfactants of
      different **compns.** indicate that 2 kinds of **micelles** are formed; one is
      a fluorocarbon-dominant **micelle** and the other is a hydrocarbon-rich
      micelle with some fluorocarbon surfactants. The ppt. from aq. soln.
      contg. the 2 surfactants below the **micellization temp.** of the mixed
      surfactants (analyzed by x-ray diffraction) is a mixt. of the 2

surfactant crystals. An anal. was made of the **temp**. dependence of the elec. cond. of an aq. soln. contg. suspended ppts. which were formed at low **temp**. from soln. of a certain molar ratio of the 2 surfactants, and the **phase diagram** of the 3-component system was constructed. The **3-dimensional phase diagram** was quite different from that of mixed surfactants which are able to form mixed **micelles** of any **compn**.

L13   ***ANSWER 22 OF 75***   CA   COPYRIGHT 2004 ACS on STN
AN   123:66578   CA
TI   Investigations of the Phase Changes of Nonionic Surfactants Using Microscopy, Differential Scanning Calorimetry, and Rheology. 1. Synperonic A7, a C13/C15 Alcohol with 7 mol of Ethylene Oxide
AU   Dimitrova, G. T.; Tadros, Th. F.; Luckham, P. F.
CS   Zeneca Agrochemicals (formerly part of the ICI group), Jealott's Hill Research Station, Bracknell/Berkshire, RG12 6EY, UK
SO   Langmuir (1995), 11(4), 1101-11
AB   The **phase diagram** of a nonionic surfactant (e.g., Synperonic A7 ($C13/C15$ alc. with 7 mol of C_2H_4 oxide)) was studied by using polarizing microscopy, DSC, and rheol. **measurements**. The various phases produced were studied from the texture obsd. at various surfactant **concns** by using polarizing microscopy. At 20°, the surfactant produced hexagonal (middle phase) structures when the **concn**. was increased > 30%. This middle phase structure changed to a lamellar (neat phase) structure at **concns**. .gtorsim. 55%. The neat phase remained up to a **concn**. of ~ 85%. Microscopic studies were also carried out as a function of **temp**. (at const. surfactant **concn**.). This established the **temp**. at which phase transition from liq. cryst. structure to isotropic liq. phases occurred. Some results on these phase changes were also obtained by using DSC **measurements**. Both steady state and oscillatory **measurements** were carried out as a function of surfactant **concn**. and **temp**. At surfactant **concns**. < 30% (i.e., in the L1 region), the **viscosity-temp**. curves showed a max. that shifted to lower **temps**. as the surfactant **concn**. increased. The initial increase in **viscosity** with increase of **temp**. is attributed to aggregation and/or change in the shape of the **micelle**, while the redn. is thought to be due to the breakdown of the **micellar** structure. **Viscoelastic measurements** of the concd. surfactant solns. (30-85%) (i.e., in the hexagonal and lamellar regions) were carried out at 20°. The moduli-**concn**. curves show 2 maxima at ~ 45 and ~ 70% and this is explained in terms of the structural changes that occur in the system as the **concn**. is increased. **Measurements** as a function of **temp**. showed a rapid redn. in the moduli values at a crit. **temp**. at which the liq. crystal structure undergoes "melting" to form a liq.-like structure. The rheol. results were used to establish the **phase diagram** and the results were compared with those obtained by using microscopy and DSC.

L13   ANSWER 24 OF 75   CA   COPYRIGHT 2004 ACS on STN
AN   122:249067   CA
TI   Effect of NaCl on a Nonionic Surfactant Microemulsion System
AU   Ajith, S.; Rakshit, Animesh Kumar
CS   Faculty of Science, M. S. University of Baroda, Baroda, 390 002, India

SO   Langmuir (1995), 11(4), 1122-6

AB   Various types of microstructure and macroscopic phase changes of the
      pseudoternary system alkane/Brij 35 + propanol/H2O (studied in the
      presence of different amts. of NaCl at different **temps**.) are described.
      Viscosity and conductance studies reveal that the system at 80%
      surfactant (S) (where S indicates Brij 35 and 1-propanol together)
      probably exists as a bicontinuous microemulsion at all H2O fractions
      even in the presence of NaCl. In the presence of NaCl, the
      pseudoternary **phase diagrams** of these systems change with change of
      temp. Increasing the **concn**. of NaCl brings down the Winsor I → III
      transition **temp**. and at 2.5 M NaCl, the system exists as Winsor III
      along the entire range of **temp**. studied (30-70°). However a Winsor III
      → II transition was not obsd. in this case in this **temp**. range and also
      within the NaCl **concn**. range studied. The **cloud** point of the
      microemulsions and the contact angle of these systems with a Téflon
      surface were also **detd**. The contact angles indicate similar structure
      over the entire range of **oil**/H2O ratios.

AN   121:206560 CA
TI   **Characterization** of a Poly(ethylene oxide)-Poly(propylene oxide)
      Triblock Copolymer (EO27-PO39-EO27) in Aqueous Solution
AU   Glatter, Otto; Scherf, Guenther; Schillen, Karin; Brown, Wyn
CS   Institute of Physical Chemistry, University of Graz, Graz, A-8010,
      Austria
SO   Macromolecules (1994), 27(21), 6046-54
AB   The poly(ethylene oxide)-poly(propylene oxide) triblock copolymer
      (EO27-PO39-EO27) was studied in aq. soln. in a wide range of **temps**. and
      concns. A **phase diagram** is presented which is based on small-angle x-
      ray scattering, ultrasonic speed **measurements**, differential scanning
      calorimetry, low-shear **viscometry**, and light transmission **measurements**.
      A broad transition from unimers to **micelles** with increasing **temps**. is
      found. The **micelles** have close to spherical symmetry with a core-shell
      structure and an outer layer that can be described as a star **micelle**.
      The **micelles** grow in size with **temp**., and phase sepn. with **clouding**
      takes place at **temps**. >85°. A stiff gel is found at **concns**. >24% by
      wt.

AN   121:66331 CA
TI   Phase Behavior and Properties of a Microemulsion in the Presence of
      NaCl
AU   John, Ajith Cherian; Rakshit, Animesh Kumar
CS   Faculty of Science, M.S. University of Baroda, Baroda, 390 002, India
SO   Langmuir (1994), 10(7), 2084-7
AB   The effect of salinity, particularly high NaCl **concns**., on the **phase
      diagram** of the pseudoternary system cyclohexane/sodium dodecyl sulfate
      + propanol/water was studied at various **temps**. Drastic changes were
      obsd. with increasing salinity and a three-phase zone appears at
      approx. 1 M **concn**. At still higher **concns**. only two-phase regions
      remain. The vol. **measurement** with increasing salinity reveals three

types of Winsor formations (Winsor I, II, and III). The optimal
salinity **detd.** by **plotting** solubilization **parameters** of **oil** Vo/Vm and
that of water Vw/Vm against NaCl **concn.** declines with **temp.** increment
and attains a constancy above 70°. Physicochem. properties, viz.
conductance, **viscosity**, and adiabatic compressibility, investigated for
a one-phase microemulsion in the presence of NaCl prove the existence
of W/O, O/W, and biocontinuous structures in the system. An unexpected
and surprising decrease in the cond. of W/O samples with elevation in
temp. was also noticed.

L13   ANSWER 35 OF 75   CA   COPYRIGHT 2004 ACS on STN
AN   119:273888   CA
TI   **Cloud** point phenomena in the phase behavior of alkyl polyglucosides in
      water
AU   Balzer, Dieter
CS   Huels AG, Marl, Germany
SO   Langmuir (1993), 9(12), 3375-84
AB   Detailed investigations show that, for very narrow ranges of structure,
      alkyl polyglucosides have lower consolute **temps.** Compared with
      ethoxylates, the effects of electrolytes are very unusual. Thus, all
      inorg. salts, with only small differences, result in a distinct redn.
      in the **cloud** point, whereas alkali-metal salts have a strong
      hydrotropic effect. The electrolyte sensitivity is very much higher
      than for the ethoxylates. The effects of the alkyl polyglucosides can
      be explained on the assumption that there is a neg. elec. charge on the
      surface of the **micelles** while the ethoxylates are more or less
      uncharged. This is demonstrated by the effect of ionic surfactants on
      the **cloud** point, and by direct **measurements** of the ζ potential both in
      emulsions nad in **micelles.**

L13   ANSWER 36 OF 75   CA   COPYRIGHT 2004 ACS on STN
AN   118:198923   CA
TI   Aggregation behavior of hexaethylene glycol decyl
      ether/dipalmitoylphosphatidylcholine mixture in aqueous dispersion
AU   Inoue, Tohru; Motoyama, Ryosaku; Miyakawa, Kenji; Shimozawa, Ryosuke
CS   Fac. Sci., Fukuoka Univ., Fukuoka, 814-01, Japan
SO   Journal of Colloid and Interface Science (1993), 156(2), 311-18
AB   The mixt. of hexaethylene glycol decyl ether (C10E6) and DPPC assumes
      diverse aggregation states in aq. dispersion, depending on the **compn.**
      and **temp.** Accordingly, the vesicle-to-mixed-**micelle** transformation
      occurring in this system exhibits a remarkably different behavior below
      and above 35.5°. The **phase diagram** of the aq. C10E6/DPPC mixt. was
      constructed based on the **turbidity**, quasi-elastic light scattering, and
      DSC **measurements.** The **characteristic** feature of this system is the
      appearance of a phase sepn. region, analogous to the phenomenon obsd.
      in aq. solns. of polyoxyethylene-type nonionic surfactants at **temps.**
      above the **cloud** points. The **temp.**-induced reversible transformation
      between mixed **micelles** and vesicles is also an interesting feature of
      this system, which has rarely been obsd. in other aq. dispersions of
      surfactant/phospholipid mixts.

AN   116:46763 CA
TI   Theoretical and experimental **determinations** of the crossover from dilute to semidilute regimes of **micellar** solutions
AU   Carale, Teresa R.; Blankschtein, Daniel
CS   Cent. Mater. Sci. Eng., Massachusetts Inst. Technol., Cambridge, MA, 02139, USA
SO   Journal of Physical Chemistry (1992), 96(1), 459-67

AB   A theor. framework for predicting the crossover surfactant **concn.** (X*) marking the transition from dil. to semidilute to soln. regimes of **micellar** solns. is presented. In the dil. regime, the **micellar** soln. consists of identifiable, rodlike **micelles** which are singly dispersed in the solvent, whereas in the semidilute regime it consists of a transient network of entangled rodlike **micelles**. The theor. formulationm incorporates the unique salient features of the **micellar** system, including the self-assembling nature, polydispersity, and flexibility of the rodlike **micelles** present in soln. This general theor. description is then used to examine the possible occurrence of a crossover from dil. to semidilute regimes in aq. solns. of the nonionic surfactant n-dodecyl hexaethylene oxide (C12E6). In the C12D6-H2O system, the X* vs. **temp.** crossover **concn.** curve intersects the coexistence curve, delineating the boundary between the 1- and 2-phase regions of the **phase diagram**, in the vicinity of the lower consolute (crit.) point, thus bisecting the **phase diagram** into dil. and semidilute regimes. It is noteworthy that the X* values predicted by using the full **micellar** size distribution agree well with those predicted under the assumption of monodisperse **micelles** having an aggregation no. n, corresponding to ⟨n⟩w, the wt.-av. **micelle** aggregation no. An attempt is also made to est. exptl. the C12E6 crossover **concn.** (X*) based on a comparison of the predicted dil.-soln. **viscosities**, calcd. in the context of a generalized M. Doi-S. Edwards (1978) theory applied to flexible, polydisperse rodlike **micelles**, with **measured viscosities** as a function of C12E6 **concn.** and **temp.** The exptl. deduced X* values compared favorably with the theor. predicted ones. As in the case of X*, it is noteworthy that predicted **viscosities** (using the full **micellar** size distribution) are in close agreement with those predicted under the assumption of monodisperse **micelles** having an aggregation no., n = ⟨n⟩w. There is also an interesting **temp.** dependence of the **viscosity** vs. C12E6 **concn.** curves. At very low surfactant **concns.**, the **viscosity** follows the conventional behavior; i.e., it decreases with increasing **temp.** Beyond a certain surfactant **concn.**, the **temp.** dependence is reversed; i.e., the **viscosity** increases with increasing **temp.** An interpretation of this behavior in the context of **micellar** growth is suggested. A discussion of the implications of the new findings for modeling the phase behavior of aq. **micellar** solns. contg. nonionic surfactants of the alkyl polyethylene oxide (CiEj) type is also presented.

AN   115:120698 CA
TI   Nonionic surfactant phase behavior. The effect of CH3 capping of the

terminal OH. Accurate **measurements** of **cloud** curves

AU Conroy, J. P.; Hall, C.; Leng, C. A.; Rendall, K.; Tiddy, G. J. T.;
    Walsh, J.; Lindblom, G.
CS Dep. Phys. Chem., Univ. Umea, Umea, Swed.
SO Progress in Colloid & Polymer Science (1990), 82(Surfactants Macromol.:
    Self-Assem. Interfaces Bulk), 253-62

AB **Phase diagrams** were **detd.** by optical microscopy for several
    polyoxyethylene surfactants where the terminal OH group is replaced by
    OMe (surfactants denoted CnEOmOMe). The derivs. studied were
    C12EO4OMe, C12EO6OMe, and C12EO8OMe. In addn., a **phase diagram** is
    given for the conventional nonionic C12EO2. Changing OH to OMe has a
    drastic effect on phase behavior at higher **temps.** (>50 °C), reducing
    mesophase upper **temp.** limits and the **cloud temp.** (Tc) by 20-30 °C.
    Phase transitions that occur below 20 °C and the mesophase sequence
    with increasing surfactant **concns.** are almost unaltered by Me
    substitution. Accurate **cloud**-curve **measurements** are reported for
    C8EO4, C12EO4, C12EO8, C16EO6, C16EO8, and C22 = EO6 (hexaethylene
    glycol-cis-13-docosenyl ether, erucyl EO6). From these curves,
    accurate values of the crit. surfactant **concn.** and **temp.** for the lower
    consolute boundary are derived. All the data support the hypothesis
    that two very different processes exist for nonionic surfactant
    clouding, one due to crit. dewetting of EO chains (similar to EO
    polymer **clouding**) and the second arising from a rod/disk **micelle** shape
    change. Finally, surfactant self-diffusion **measurements** are reported
    for the two reversed bicontinuous cubic (V2) phases of C12EO2. These
    are similar for both phases and to not allow any structural difference
    to be **detd.**

L13 ANSWER 49 OF 75 CA COPYRIGHT 2004 ACS on STN
AN   113:12580 CA
TI   **Phase diagrams** of nonionic polymer-water systems: experimental and
     theoretical studies of the effects of surfactants and other cosolutes
AU   Karlstroem, Gunnar; Carlsson, Anders; Lindman, Bjoern
CS   Chem. Cent., Univ. Lund, Lund, S-221 00, Swed.
SO   Journal of Physical Chemistry (1990), 94(12), 5005-15

AB   An exptl. investigation of the interactions between nonionic polymers,
     such as ethyl(hydroxyethyl)cellulose and poly(ethylene oxide), and
     small mols. (alcs., inorg. salts, and surfactants) in soln. is
     presented and discussed. The exptl. tool in the investigation is **cloud**
     point (CP) **measurements**. The studied polymers belong to a class of
     colloids which displays a decreased soly. with increasing **temp.** in aq.
     (and certain nonaq.) solns. At the CP **temp.**, the system is transformed
     from a single isotropic soln. to a two-phase system. If binding of the
     cosolutes occurs, this may lead to either an increase or a decrease in
     polymer soly. Alternatively, the cosolutes interact preferably with
     the solvent and thereby affect the soly. of the polymer. A
     particularly strong effect on the polymer soly. is obtained for ionic
     surfactants in the presence of relatively low **concn.** of electrolytes,
     where a min. in the CP curve is obsd. at low surfactant **concns.** A
     theor. model based on Flory-Huggins polymer theory is shown to be
     capable of describing the obsd. phase behavior. In this model the

clouding in the pure polymer-water system is due to an equil. between polar and nonpolar conformers of the polymer segments. The exptl. obsd. phase behavior can then be modeled if there is a strong attraction between the surfactant and the polymer in its polar conformation, a weaker but still strong attraction between the nonpolar segments and the surfactant, and finally a weak attraction between the surfactant and water. Comparison between theor. and exptl. data gives new insight into the interactions on a mol. level. It is indicated that, at **temps.** close to the CP, the surfactant binds to the polymer as single mols. or small **micelles**, whereas at lower **temps.** it binds as larger **micelles**.

L13 ANSWER 50 OF 75 CA COPYRIGHT 2004 ACS on STN
AN   112:186320 CA
TI   Phase equilibria of nonionic surfactant-water systems as a function of
      temperature and pressure: effect of mixing of surfactants
AU   Nishikido, Nagamune
CS   Fac. Sci., Fukuoka Univ., Fukuoka, 814-01, Japan
SO   Journal of Colloid and Interface Science (1990), 136(2), 401-7
AB   The **temp.**-pressure **phase diagrams** of mixed nonionic surfactants (tetra-
      and hexaoxyethylene dodecyl ether, C12E4 + C12E6) and nonionic +
      anionic surfactants (C12E4 + SDS) vs. water systems at const. **concn.**
      were **detd.** through the change in transmittance of the soln. The **phase
      diagram** of these systems, the intermicellar attractive interactions
      causing the **clouding** phenomenon, and the Krafft phenomenon of nonionic
      surfactants in water are discussed. The Krafft **temp.** (TK) of mixed
      (C12E4 + C12E6) in water were obtained exptl. at high pressure (60-350
      MPa) and the dependence of TK on the mixing (**micelle**) **compn.** showed
      that different components C12E4 and C12E6 are completely miscible in
      both the **micellar** state and the hydrated solid state. In the **phase
      diagram** of the mixed (C12E4 + SDS)-water system, a slightly **turbid** aq.
      phase was obsd. in place of the lamellar phase and the so-called
      surfactant phase which exist above the **cloud temp.** in pure C12E4-water
      systems. In addn., 2 different solid forms are obsd. at high
      pressures, and this implies that different components C12E4 and SDS are
      completely miscible in the **micellar** state, but immiscible in the
      hydrated solid state.

L13 ANSWER 53 OF 75 CA COPYRIGHT 2004 ACS on STN
AN   111:9275 CA
TI   Solution properties of homogeneous polyglycerol dodecyl ether nonionic
      surfactants
AU   Sagitani, Hiromichi; Hayashi, Yoshie; Ochiai, Michio
CS   Yokohama Res. Lab., Pola Corp., Yokohama, Japan
SO   JAOCS, J. Am. Oil Chem. Soc. (1989), 66(1), 146-52
AB   The synthesis and soln. properties of di-, tri- and tetraglycerol
      monododecyl ethers (A) were described. The phase behavior, surface
      tension, **cloud** point, and HLB value of these surfactants in aq. solns.
      and in mixed solns. of water/**oil** were investigated and compared with
      values for polyoxyethylene dodecyl ether (I). The surface tension
      measurements showed that A had sufficiently low values of surface

tension and crit. **micellization concn.** (cmc) to serve as useful nonionic surfactants. The mesophases appearing in the A systems were more stable in a high **temp.** range than the mesophases of the I systems. The **cloud** point and HLB data indicated that addn. of one glycerol group was equiv. to the addn. of three oxyethylene units, as far as the hydrophilic property was concerned. The **phase diagrams** of the A/dodecane/water systems showed that the solubilizing and emulsifying powers of A were greater than those of I. The polyglycerol chain could be even more useful as the hydrophilic part of nonionic surfactants than the conventional oxyethylene chain.

L13   ANSWER 54 OF 75   CA   COPYRIGHT 2004 ACS on STN
AN   110:219469   CA
TI   Novel phase behavior in three-component **oil**-water-surfactant systems: a truncated isotropic channel in the **oil**-rich regime
AU   Findenegg, G. H.; Hirtz, A.; Rasch, R.; Sowa, F.
CS   Ruhr-Univ. Bochum, Bochum, D-4630/1, Fed. Rep. Ger.
SO   Journal of Physical Chemistry (1989), 93(11), 4580-7
AB   The phase behavior of 3-component systems of the type H2O + hydrocarbon + poly(oxyethylene) alkyl ether (C8E4 and C10E5) was studied at **temps.** below the phase inversion. A narrow one-phase region was found in the **oil**-rich corner, which intrudes into the central miscibility gap between water and **oil**. At low **temps.**, the molar ratio of H2O and surfactant in this phase corresponds to 2 H2O mols. per oxyethylene group of the surfactant, and thus this phase may represent a hydrate strongly swollen with **oil**. As the **temp.** is raised, this region of one-phase stability becomes sepd. from the main one-phase region at higher surfactant **concns.** and shrinks to a point at which this phase decomps. into 2 other liq. phases at a **temp.** Tmax. Below this **temp.**, the one-phase region is connected with 2 narrow three-phase regions, one of which disappears at a lower crit. end point while the other extends to much lower **temps.** **Measurements** of the densities, **viscosities**, and interfacial tensions at three-phase coexistence are also presented and are consistent with the proposed **phase diagram.**

L13   ANSWER 55 OF 75   CA   COPYRIGHT 2004 ACS on STN
AN   110:33138   CA
TI   Conductometric titrations of polyprotic acids in nonaqueous mixed solvents. Effects of **temperature** and composition of the solvent mixture
AU   **Franchini, Giancarlo**; Marchetti, Andrea; Preti, Carlo; Tassi, Lorenzo; Tosi, Giuseppe
CS   Dep. Chem., Univ. Modena, Modena, 41100, Italy
SO   Analytical Chemistry (**1989**), 61(2), 177-84
AB   The effects of **temp.** and compn. of the solvent mixts. on the shape and anal. recoveries of conductometric titrns. of polyprotic acids were studied for the solvent system 2-methoxyethanol/ethane-1,2-diol operating at -10, 25, 50, and 75°. The N- or chair-shape of the titrn. curves depends on the physicochem. properties of the solvent, on the **temp.**, and on the acid solute to be titrated; in particular the influence of the distance between the carboxylic groups is discussed.

Titrns. performed in 2-methoxyethanol are assocd. in general with N-shaped curves, which however turn to chair-shaped as the **temp**. increases. Ethane-1,2-diol always produces chair-shaped curves as a consequence of its greater dissocg. power the titrn. formed adducts. The study of the titrns. of phthalic acid in some mixts. of the above solvents exhibited behaviors consistent with previous observations regarding the existence of a particular "limiting mixt." which separates the solvent system under study into two well-defined groups $(0 \leq \chi$ethane-1,2-diol < "limiting mixt." and "limiting mixt." < χethane-1,2-diol ≤ 1). The feasibility of the resoln. of acid mixts. was demonstrated by titrating citric acid in the above solvents.

L13   ANSWER 61 OF 75   CA   COPYRIGHT 2004 ACS on STN
AN   106:86713   CA
TI   On an automated device for the **determination** of isotropic microemulsion phases of ternary systems including a nonionic surfactant
AU   Tondre, C.; Robert, A.; Burger, C.
CS   CNRS, Univ. NANCY I, Vandoeuvre-les-Nancy, 54506, Fr.
SO   Journal of Dispersion Science and Technology (1986), 7(5), 581-97
AB   The advantages and limits of an automatic procedure which permits the fast **detn**. of the **compn**. limits of isotropic microemulsion phases of water-**oil**-surfactant systems are **detd**. This system is based on detecting the **temp**. defining the lower and upper miscibility curves by the change of **turbidity** to study the solubilization of **oil** or water in binary mixts. of nonionic surfactants and water or **oil** and then reconstructing the usual ternary **phase diagram** at any chosen **temp**. The method was esp. well suited for the investigation of systems including nonionic surfactants which are very sensitive to **temp**. changes. Four systems were tested including hydrogenated as well as fluorinated surfactants and **oils**. Data obtained for systems having neat **turbidity** changes were easy to interpret. For systems contg. a liq. cryst. phase the **turbidity-temp**. curve was more difficult to interpret.

L13   ANSWER 68 OF 75   CA   COPYRIGHT 2004 ACS on STN
AN   94:20853   CA
TI   Effect of pressure on the solution behavior of nonionic surfactants in water
AU   Nishikido, Nagamune; Yoshimura, Nobuyoshi; Tanaka, Mitsuru
CS   Fac. Sci., Fukuoka Univ., Fukuoka, 814, Japan
SO   Journal of Colloid and Interface Science (1980), 78(2), 338-46
AB   The **phase diagrams**, i.e., the pressure-**temp**.-**compn**. diagrams of each system, tetra-, penta-, and hexaoxyethylene dodecyl ether (C12E4, C12E5, and C12E6, resp.) vs. water, were **detd**. by the use of the observation that the transmittance of the soln. changes sharply with the change of the dissolved state of the solute. The **temp**.-pressure **phase diagrams** involve the regions of the **micellar** soln., the liq. surfactant phase + water phase, the hydrated solid + water phase, and the liq. crystal + water phase. The **cloud temp**. increased and its increasing rate became smaller with increasing pressure. By considering that the **cloud temp**.-**compn**. curve is a liq.-liq. mutual soly. curve and the idea of "assocd. soln." of Prigogine and Defay, the

thermodn. quantities (enthalpy, entropy, and vol.) accompanied by the sepn. of the liq. surfactant phase from the water phase above the **cloud temp**. for the C12E5-water system are derived. The enthalpy and entropy changes were pos. and depended little on pressure, while the vol. change was pos. and decreased, tending to zero, with the pressure up to 300 MPa. This suggests that hydrophobic bonding as well as the partial dehydration of oxyethylene groups of surfactant contribute to the sepn. of the liq. surfactant phase from the water phase. In the **compn.**-pressure diagram close to the regions of the **micellar** soln. and the hydrated solid + water phase for the C12E5-water system, a sudden increase in the soly. of surfactant at a certain pressure was found with decreasing pressure and at const. **temp**., which corresponds to the Krafft phenomenon and can be attributed to the effective dissoln. of surfactant as a **micellar** form in water.

L13   ANSWER 73 OF 75   CA   COPYRIGHT 2004 ACS on STN
AN   54:89685   CA
OREF 54:16991b-d
TI   Solubilization of long-chain alkyl compounds by nonionic surfactants and **cloud** formation in such systems
AU   Nakagawa, T.; Tori, K.
CS   Shionogi & Co., Amagasaki
SO   Kolloid-Zeitschrift (1960), 168, 132-9
AB   **Cloud** points and **concn**. of solubilizate (I) at satn. (i.e. greatest **concn**. remaining transparent) were **detd**. for various **concns**. of n-C8H18, C10H22, C12H26, n-C8H17OH, C10H21OH, C12H25OH, n-C10H21Cl, C10H21NH2, and n-C9H19CO2H solubilized in 1% aq. n-C10H21(OCH2CH2)10OMe (prepn. given). The intersecting **cloud** point and satn. curves on a **temp**.-**concn. plot** define a **phase diagram**, which consists of domain A, below satn. and below the **cloud** point, a single phase; domain B, above satn. and below the **cloud** point, an aq. phase contg. dissolved surfactant (II) and I in equil. with a 2nd phase consisting of almost pure I; domain C, above satn. and above the **cloud** point, an aq. phase satd. with II and I in equil. with a 2nd phase consisting of I, II, and some water. Domain D is the special case of domain C, where I and II are immiscible and thus there are 3 phases. Evidence for these distributions was obtained by addn. of dyes sensitive to II **micelles**, e.g. water-sol. pinacyanol chloride and **oil**-sol. Sudan III.

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